

Patent Claims:

1. A method for operating a hydraulic vehicle brake system, in which hydraulic pressure is introduced by means of a hydraulic booster, characterized in that the hydraulic pressure is metered directly into a master brake cylinder (11) by way of a preceding hydraulic booster (7), and in that the hydraulic pressure is controlled in accordance with a quantity representative of the driver's braking request because the pressure in the preceding hydraulic booster (7) is controlled by actuation of at least two analog or analogized valves (6).
2. The method as claimed in claim 1, characterized in that the hydraulic pressure in the preceding hydraulic booster (7) is controlled by actuation of a first analog or analogized valve (6), which controls the conduction of pressure fluid from the hydraulic booster (7) into a pressure fluid supply tank (13), and by actuation of a second analog or analogized valve (5), which controls the supply of the pressure fluid from an independent pressure source (4, 19, 20) into the hydraulic booster (7).
3. The method as claimed in claim 1 or 2, characterized in that the pressure of the independent pressure source (4, 19, 20) is generated by actuation of a motor of a motor-pump unit (19, 20) and is stored in a hydraulic high-pressure accumulator (4).

4. The method as claimed in any one of claims 1 to 3, characterized in that the analog or analogized valves (5, 6) are actuated for the purpose of application of a defined hydraulic pressure to a booster piston (41) of the hydraulic booster (7), said pressure being introduced into the wheel brakes of the vehicle by way of a master brake cylinder piston operatively connected to the booster piston (41) in the force output direction.
5. The method as claimed in any one of claims 1 to 4, characterized in that the braking pressure is controlled and/or hydraulic pressure is built up in the high-pressure accumulator (4) by actuation of electronically controllable valves (1, 2).
6. The method as claimed in any one of claims 1 to 5, characterized in that the driver can introduce hydraulic pressure into the brake system by way of a direct operative connection between the preceding hydraulic booster (7) and a brake pedal.
7. The method as claimed in any one of claims 1 to 6, characterized in that the pedal travel of a brake pedal and/or a quantity derived from the pedal travel, in particular pedal speed or pedal acceleration, is used for detecting the driver's braking request.
8. The method as claimed in any one of claims 1 to 7, characterized in that the pressure in the preceding hydraulic booster (7) is determined or estimated on the basis of a measured hydraulic pressure in the master brake cylinder.

9. The method as claimed in any one of claims 3 to 8, characterized in that the pressure in the hydraulic high-pressure accumulator (4) is monitored by means of a pressure sensor.
10. The method as claimed in any one of claims 3 to 9, characterized in that only valve (55) is operated for charging the hydraulic high-pressure accumulator (4).
11. The method as claimed in any one of claims 3 to 10, characterized in that the charging operation of the hydraulic pressure accumulator (4) starts before a bottom switch point of a pressure sensor at the high-pressure accumulator is reached.
12. The method as claimed in any one of claims 3 to 11, characterized in that the charging operation of the hydraulic high-pressure accumulator (4) takes place in periods of rising and/or constant engine load of the driving engine of the vehicle.
13. The method as claimed in any one of claims 3 to 12, characterized in that the charging operation of the hydraulic high-pressure accumulator (4) is discontinued upon brake application and/or in the event of an engine load of the driving engine of the vehicle.
14. The method as claimed in any one of claims 3 to 13, characterized in that the charging operation of the hydraulic high-pressure accumulator (4) takes place when the engine load of the driving engine of the vehicle

is equal to zero (0) or lower than zero (<0) (stalling), and/or when a generally constant speed of the vehicle prevails.

15. The method as claimed in any one of claims 1 to 14, characterized in that the pressure is additionally increased by way of a pressure-increasing unit, preferably a hydraulic pump, when the point of maximum boosting of the hydraulic booster is exceeded.
16. The method as claimed in any one of claims 1 to 15, characterized in that the booster is rated to achieve a relatively low booster output, and in that the pressure is increased additionally by means of a pressure-increasing unit, preferably a hydraulic pump.
17. The method as claimed in claim 15 or 16, characterized in that a quantity representative of the driver's braking request is used as a command variable for the additional pressure increase.
18. The method as claimed in claim 16, characterized in that the pedal travel of a brake pedal and/or a quantity derived from the pedal travel, in particular pedal speed or pedal acceleration, is used as a quantity representative of the driver's braking request.
19. The method as claimed in any one of claims 3 to 18, characterized in that a point of maximum boosting of the hydraulic booster is determined on the basis of a ratio between the pressure in the hydraulic accumulator and the pressure in the master brake cylinder

and a constructive ratio between the surface of a hydraulic piston in the hydraulic booster and the surface of a hydraulic piston in the master brake cylinder.

20. The method as claimed in any one of claims 3 to 19, characterized in that the braking pressure in the wheel brakes is controlled by way of switching two electronically actuatable valves in a closed hydraulic system.